

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Docket No: Q78507

Satoshi ARAKAWA

Appln. No.: 10/714,851

Group Art Unit: 2884

Confirmation No.: 3709

Examiner: Shun K. LEE

Filed: November 18, 2003

For: RADIATION IMAGE READ-OUT APPARATUS

SUBMISSION OF APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

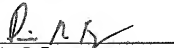
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Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. The statutory fee of \$500.00 is being charged to Deposit Account No. 19 4880 via EFS Payment Screen. The USPTO is also directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: January 19, 2007

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

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Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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I. REAL PARTY IN INTEREST

The real party in interest is FUJI PHOTO FILM CO. LTD., by virtue of an assignment executed by Takeshi Funahashi (Appellant, hereafter), on December 21, 2001, and recorded by the Assignment Branch of the U.S. Patent and Trademark Office on January 15, 2002 (at Reel 012502, Frame 0304).

Appellant further advises that since the recordation of assignment, the assignee has undergone a name change and restructuring such that the new name of the holding entity is FUJIFILM CORPORATION.

II. RELATED APPEALS AND INTERFERENCES

To the knowledge and belief of Appellants, the Assignee, and the undersigned, there are no other appeals or interferences before the Board of Appeals and Interferences that will directly affect or be affected by the Board's decision in the instant Appeal.

III. STATUS OF CLAIMS

The instant application was filed with claims 1-5. Claims 6-10 were added in the Amendment filed January 24, 2006. Claims 1-10 are currently pending in the present application.

Claims 1, 2, and 4-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura (U.S. 4,780,376) in view of Neyens (U.S. 5,517,034) and Bradley (U.S. 5,043,991). Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura in view of Neyens and Bradley, and further in view of Research Disclosure 308117. Claims 8 and 9 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claims 8 and 9 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 10 is objected to as being allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claim.

The rejections of claims 1-9 are being appealed.

IV. STATUS OF AMENDMENTS

The amendments to claims 1, 6-8 and 10 submitted on August 14, 2006, in response to the Final Office Action, have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present application relates to a radiation image read-out apparatus.

According to claim 1 of the invention, disclosed is a radiation read-out apparatus, comprising:

a radiation image converter panel,²

a stimulating light projecting means which projects stimulating light onto the radiation image converter panel,³ and

a detecting means which detects stimulated emission emitted from the radiation image converter panel upon exposure to the stimulating light beam and reads out a radiation image recorded on the radiation image converter panel.⁴

wherein the stimulating light projecting means projects, onto the radiation image converter panel, stimulating light in a wavelength range where the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm;⁵ and

wherein the wavelength of the stimuable light fluctuates in a manner that would cause a change in the intensity of the stimuable emission.⁶

² Specification, page 8, line 26 - page 9, line 8.

³ *Id.*, page 9, lines 9 - 23.

⁴ *Id.*, page 9, line 24 - page 10, line 6.

⁵ *Id.*, page 12, lines 4 - 23; page 13, lines 12 - 25, and page 15, lines 7 - 23.

⁶ *Id.*

According to claim 8 of the invention, it is disclosed that wherein the rate of change of intensity of the stimuable emission is suppressed to not larger than 1.0%/nm and not smaller than -1.0%/nm as an increase in the intensity of the stimulated emission due to a fluctuation in wavelength of a first stimulating light source is cancelled by a reduction in the intensity of the stimuable emission due to a fluctuation in wavelength of a second stimulating light source.⁷

According to claim 9 of the invention, it is disclosed that wherein the rate of change of intensity of the stimuable emission is suppressed to not larger than 1.0%/nm and not smaller than -1.0%/nm as an increase in the intensity of the stimulated emission due to a fluctuation in wavelength of a first stimulating light source is cancelled by a reduction in the intensity of the stimuable emission due to a fluctuation in wavelength of a second stimulating light source.⁸

⁷ Specification, page 16, lines 1 – 20.

⁸ *Id.*

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 2, and 4-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura (U.S. 4,780,376) in view of Neyens (U.S. 5,517,034) and Bradley (U.S. 5,043,991).

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura in view of Neyens and Bradley, and further in view of Research Disclosure 308117.

Claims 8 and 9 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 8 and 9 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

VII. ARGUMENT

Claims 1, 2, and 4-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura (U.S. 4,780,376) in view of Neyens (U.S. 5,517,034) and Bradley (U.S. 5,043,991).

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.”² Section 2142 further states that “[t]he initial burden is on the examiner to provide some suggestion of desirability of doing what the inventor has done.”¹⁰ Appellant respectfully submits that the Examiner has failed to provide a *prima facie* case of obviousness with respect to claim 1 of the instant invention. Specifically, the Examiner has failed to meet the first and third criteria listed above in the rejections.

Claim 1, recites:

A radiation image read-out apparatus which comprises:

a radiation image converter panel,

a stimulating light projecting means which projects stimulating light onto the radiation image converter panel, and

² MPEP §2142

¹⁰ *Id.*

a detecting means which detects stimulated emission emitted from the radiation image converter panel upon exposure to the stimulating light beam and reads out a radiation image recorded on the radiation image converter panel,

wherein the stimulating light projecting means projects, onto the radiation image converter panel, stimulating light in a wavelength range where the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm; and

and wherein the wavelength of the stimuable light fluctuates in a manner that would cause a change in the intensity of the stimuable emission.

In the Final Office Action dated April 14, 2006, the Examiner alleges that Nakamura teaches all of the aspects of claim 1, with the exception that the Examiner concedes that Nakamura fails to teach or suggest stimulating light in a wavelength range where the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm.¹¹ However, the Examiner alleges that Neyens cures the defects noted in Nakamura.¹² Additionally, the Examiner concedes that Nakamura teaches or suggests “wherein the wavelength of the stimuable light fluctuates in a manner that would cause a change in the intensity of the stimuable emission.”¹³ The Examiner applies Bradley to cure the defect noted with respect to Nakamura and Neyens.¹⁴

Per a telephone interview with the Examiner on July 27, 2006, the Examiner is interpreting FIG. 1 in Neyens to show that the intensity of stimulated emission may be

¹¹ Final Office Action, page 6, lines 3 - 9.

¹² *Id.*, page 6, lines 9 - 19.

¹³ *Id.*, page 8, lines 10 - 12.

¹⁴ *Id.*, page 8, lines 12 - 14.

maximized at a single wavelength within a wavelength range, and that a rate of change of the intensity of the stimulated emission at the single wavelength would have a rate of change of 0%/nm (the wavelength corresponding to the peak of the graph in FIG. 1).¹⁵

Appellant respectfully submits, based on this interpretation, that Neyens fails to teach or suggest that a rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm, as Neyens fails to teach or suggest a change in the wavelength. Neyens discloses that exposing a phosphor with stimulating light having a wavelength which produces a maxima in a stimulation spectrum is desirable to read out a radiation image.¹⁶ However, Neyens fails to teach or suggest using a stimulating light in a wavelength range where the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger and 1.0%/nm and is not smaller than -1.0%/nm; wherein the wavelength of the stimuable light fluctuates in a manner that would cause a change in the intensity of the stimuable emission. Neyens focuses on finding and using a maximum in a stimulating spectrum, but does not teach or suggest a relationship between a change in wavelength of a stimulating light, and the change in intensity of the stimuable emission.

The Examiner alleges that Bradley discloses "that even the best stabilized lasers have a drift ... over the normal range of operating temperatures."¹⁷ However, Bradley fails to teach or

¹⁵ U.S. Patent 5,517,034 to Neyens et al., FIG. 1, and col. 4, lines 21 - 29.

¹⁶ *Id.*, col. 3, lines 28 - 32 and col.

¹⁷ Final Office Action, page 8, lines 12-14.

suggest a relationship between a change in intensity of the stimuable emission and the change in wavelength of the stimulating light. Therefore, neither Neyens nor Bradley teaches or suggests that wherein the stimulating light projecting means projects, onto the radiation image converter panel, stimulating light in a wavelength range where the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm; and wherein the wavelength of the stimuable light fluctuates in a manner that would cause a change in the intensity of the stimuable emission, as is recited in claim 1. Thus, the applied references do not teach or suggest all of the elements of claim 1.

In the Advisory Action dated August 28, 2006, the Examiner asserts that “the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teaching of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d, 413, 208 USPQ 871 (CCPA 1981).”

Appellant respectfully submits that the Examiner has failed to provide a proper motivation to combine the references, and, arguing *inter alia*, even if the references are combinable, that the combined teachings of the references fail to suggest the invention claimed in claim 1. Whether a motivation to combine prior art references has been demonstrated is a question of fact.¹⁸ In making such determination the law requires some teaching, suggestion or

¹⁸ *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1348 53 USPQ2d 1580, 1586 (Fed. Cir. 2000).

reason coming from the prior art itself, otherwise, the conclusion to be reached is that the motivation is predicated on hindsight.¹⁹ Additionally, *prima facie* obviousness is a legal requirement and the burden is on the Examiner to demonstrate using only objective evidence or suggestion from the applied prior art, that one of ordinary skill would have been lead to the claimed invention as a whole without recourse to Appellant's disclosure.²⁰

Bradley discloses that lasers tend to have a wavelength drift over a temperature range.²¹ The Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention that the semiconductor laser in the modified apparatus of Nakamura is a typical semiconductor laser having a wavelength which drifts with temperature.²² However, the Examiner fails to provide any objective documentation taken from the references themselves (Nakamura, Neyens, or Bradley) that provides justification for the Examiner's proposed motivation to combine. However, arguing, *inter alia*, that the Examiner has provided a proper motivation to combine, the Examiner fails to adequately explain how one of ordinary skill in the art would find the claim 1 obvious simply because the semiconductor laser in the modified apparatus of Nakamura would drift with temperature.

¹⁹ *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F. 3d 1573, 1579, 42 USP2d 1378, 1383 (Fed. Cir. 1997).

²⁰ See: *In re Oetiker*, 977 F.2d 1443, 1447-48, 24 USPQ2d 1443, 1446-47 (Fed.Cir.1992); *In re Fine* 837 F.2d 1071, 1074-75, 5 USPQ 2d 1596, 1598-1600 (Fed.Cir.1988).

²¹ U.S. Patent 5,043,991 to Bradley, col. 1, line 62 - col. 2, line 2.

²² Final Office Action, page 8, lines 14 - 17.

Neyens discloses that it is preferable to have a stimuable light source set such that stimuable emission from is maximized.²³ However, the combined teachings then fail to teach or suggest that the stimulated emission given *a change* in wavelength of stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm. As previously noted, Bradley fails to teach the relationship between a change in intensity of the stimuable emission and the disclosed change in wavelength. Because claim 1 recites a particular relationship between the wavelength of the fluctuation in the stimulating light and the intensity of the stimuable emission, and because none of the applied references, Nakamura, Neyens, or Bradley, teach or suggest that the fluctuation in wavelength of the stimulating light is maintained such that the rate of change of the intensity of the stimulated emission is kept between -1.0%/nm and 1.0%/nm, the combination of Nakamura, Neyens and Bradley fails to result in the claimed invention.

For the reasons noted above, Examiner has failed to provide a *prima facie* case of obviousness with respect to claim 1, and therefore, claim 1 is patentable over the applied art.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura in view of Neyens and Bradley, and further in view of Research Disclosure 308117.

Claim 3 is dependent from claim 1. Because the combined teachings of Nakamura, Neyens and Bradley fail to render claim 1 obvious, and because Research Disclosure 308117 fails to cure the defects noted in the combined teachings of Nakamura, Neyens and Bradley with regard to claim 1, claim 3 is patentable over the applied art.

²³ U.S. Patent 5,517,034 to Neyens et al., FIG. 1, and col. 4, lines 21 - 29.

Claims 8 and 9 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

In the Final Office Action, the Examiner alleged that Applicant has not pointed out where the new claims are supported, nor does there appear to be a written description of the claim limitations in the application as filed for claims 8 and 9.²⁴

In the Amendment of August 14, 2006, Appellant submitted that page 15, lines 7-23 and page 16, lines 1-20 disclose the support for claims 8 and 9. Page 15 relates the relationship regarding the intensity (and rate of change thereof) for multiple stimulating lights. Page 16 discloses that a change in the intensity of the stimulated emission corresponds to a change in the wavelength of the stimulating light and that a change in intensity of the stimulated emission can be suppressed by the use of a plurality of stimulating lights operating at different wavelengths.²⁵

In response, the Examiner states “applicant argues that sufficient support for claim 8 and 9 may be found in pages 15-16 of the originally filed specification and that the rate of change of intensity in units of %/nm refers to the stimuable emission, not to the plurality of stimulating light projection means.” The Examiner, however, alleges that pages 15-16 of the original specification do not disclose that the overall change in intensity of the stimulated emission to a given change of the wavelength of the stimulating light can be suppressed. The Examiner

²⁴ Final Office Action , page 3, lines 13-15.

²⁵ Amendment filed August 14, 2006, page 6, line 19 to page 7, line 3.

alleges that the specification discloses %, not %/nm. Therefore, the Examiner continues to reject claims 8 and 9 under §112, first and second paragraph.²⁶

Appellant respectfully submits that page 12, lines 4-23 discloses the relationship between a change in wavelength of the stimulating light and a change in the intensity of the stimulated emission, or % change/nm. Further, page 13, lines 12-25 discloses the equation for finding the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light (δa). On page 15, the rate of change of the intensity of the stimulated emission is described as a sum of intensity G_a and G_b , whereby δa and δb (which is figured the same as δa , but for a second stimulating light) are averaged. Each of these sections of the specification relate that rate of change of intensity of the stimuable emission is found as %/nm, and provide support for the invention claimed in claims 8 and 9.

Therefore, Appellant respectfully submits that claims 8 and 9 are patentable over the Examiner's rejection.

Claims 8 and 9 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In the Final Office Action dated April 14, 2006, the Examiner alleges that the rate of change in units of %/nm in new claims 8 and 9 is undefined since there exists a plurality of

²⁶ Advisory Action dated August 28, 2006, page 2.

different wavelengths.²² The rejection was maintained in the Advisory Action dated August 28, 2006.²³

Appellant submits that claims 8 and 9 satisfy 35 U.S.C. §112, second paragraph. Claim 3 recites a synthesized stimulating light source including the stimulating light of different wavelengths...so that the stimulating light of different wavelengths are simultaneously projected on the same position on the radiation image converter panel. Claims 8 and 9 recite that the rate of change of intensity of the stimuable emission is suppressed by cancellation when the plurality of stimulating light projection means fluctuate in wavelength. The rate of change of intensity in units of %/nm refers to the stimuable emission, not to the plurality of stimulating light projection means. It is therefore irrelevant that the rate of change of intensity in units of %/nm does not refer to a specific wavelength of the plurality of different wavelengths are recited in claims 3, 8 and 9 because the claimed rate of change of intensity is not descriptive of the plurality of different wavelengths.

Therefore, Appellate respectfully submits that claims 8 and 9 are patentable over the Examiner's rejection.

Conclusion

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

²² Final Office Action, page 3, line 21- page 4, line 3.


²³ Advisory Action, page 2.

APPEAL BRIEF UNDER 37 C.F.R. § 41.37
U.S. Application No. 10/714,851

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Respectfully submitted,



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WASHINGTON OFFICE

23373

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Date: January 19, 2007

CLAIMS APPENDIX

CLAIMS 1-9 ON APPEAL:

1. A radiation image read-out apparatus which comprises:
 - a radiation image converter panel,
 - a stimulating light projecting means which projects stimulating light onto the radiation image converter panel, and
 - a detecting means which detects stimulated emission emitted from the radiation image converter panel upon exposure to the stimulating light beam and reads out a radiation image recorded on the radiation image converter panel,wherein the stimulating light projecting means projects, onto the radiation image converter panel, stimulating light in a wavelength range where the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm; and
 - and wherein the wavelength of the stimuable light fluctuates in a manner that would cause a change in the intensity of the stimuable emission.
2. A radiation image read-out apparatus as defined in claim 1 wherein the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 0.5%/nm and is not smaller than -0.5%/nm.

3. A radiation image read-out apparatus as defined in claim 1 wherein the stimulating light projecting means comprises a plurality of stimulating light sources which emit stimulating light of different wavelengths and projects synthesized stimulating light including the stimulating light of different wavelengths onto the radiation image converter panel so that the stimulating light of different wavelengths are simultaneously projected on the same position on the radiation image converter panel.
4. A radiation image read-out apparatus as defined in claim 1 in which the radiation image converter panel has a stimuable phosphor layer formed of alkali halide stimuable phosphors.
5. A radiation image read-out apparatus as defined in claim 4 wherein the alkali halide stimuable phosphors are represented by formula $MX:A$, wherein M represents at least one of K, Rb and Cs, X represents at least one of Cl, Br and I, and A represents Eu^{2+} or Tl^{+} .
6. A radiation image read-out apparatus as defined in claim 1 wherein the change of wavelength of the stimulating light is defined by internal heating of the stimulating light projecting means.
7. A radiation image read-out apparatus as defined in claim 1, wherein the stimuable light projecting means projects stimuable light onto the radiation image converter panel at a wavelength in which the intensity of the stimulated emission is maximized.

8. A radiation image read-out apparatus as defined in claim 3, wherein the rate of change of intensity of the stimuable emission is suppressed to not larger than 1.0%/nm and not smaller than -1.0%/nm as an increase in the intensity of the stimulated emission due to a fluctuation in wavelength of a first stimulating light source is cancelled by a reduction in the intensity of the stimuable emission due to a fluctuation in wavelength of a second stimulating light source.

9. A radiation image read-out apparatus as defined in claim 3, wherein the synthesized stimulating light projected by the plurality of stimulating light projection means suppresses the rate of change of intensity of the stimuable emission to not larger than 1.0%/nm and not smaller than -1.0%/nm by cancellation when the plurality of stimulating light projection means fluctuate in wavelength.

EVIDENCE APPENDIX:

Pursuant to 37 C.F.R. § 41.37(c)(1)(ix), submitted herewith are copies of any evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

Appellant is not submitting any evidence.

RELATED PROCEEDINGS APPENDIX

Submitted herewith are copies of decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).

There are no copies of decisions rendered by a court or the Board to be submitted.